CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 95-194

AMENDMENT TO FINAL SITE CLEANUP REQUIREMENTS (ORDER NO. 94-064)

UNITED TECHNOLOGIES CORPORATION,
(CHEMICAL SYSTEMS DIVISION - COYOTE CENTER)

OPERABLE UNIT 1

600 METCALF ROAD
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. **Site History:** United Technologies Corporation, Chemical Systems Division (UTC), owns and operates the Chemical Systems Division in Santa Clara County. The site is located on a 5200 acre parcel in a remote area in an unincorporated area of Santa Clara County approximately five miles south of San Jose and four miles east of U.S. Highway 101. UTC began on-site operation in 1959 and has used the site for developing, manufacturing and testing space and missile propulsion systems. These activities have resulted in soil and groundwater contamination at the site. The majority of contaminants identified are volatile organic compounds (VOCs).

2. **Regulatory Status:** The Board adopted Order No. 94-064 (Final Site Cleanup Requirements) on May 18, 1994. This Order contains final cleanup standards for soil and groundwater in operable unit 1, which consists of the two mostly developed valleys within the site, namely Shingle Valley and Mixer Valley.

3. **Reason for Amendment:** UTC reclaims extracted treated groundwater. Water reclamation is regulated under Order No. 91-006. In order to update and consolidate the orders for UTC, water reclamation requirements should be incorporated into site cleanup requirements for OU1 and OU2. This order incorporates water reclamation requirements for OU1. A separate order establishes site cleanup requirements for OU2 including water reclamation requirements for OU2.

4. **CEQA:** This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resource Agency Guidelines.

5. **Notification:** The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to amend site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

6. **Public Hearing:** The Board, at a public meeting, heard and considered all comments pertaining to this order.

IT IS HEREBY ORDERED, pursuant to Sections 13304 and 13523 of the California Water Code that Order No. 94-064 is amended as follows:

A. Add the following finding:

6.5. Water Reclamation

UTC reclaims the extracted groundwater which is the result of groundwater remediation throughout the site. The VOC contaminated groundwater through the site is treated at several treatment units located in Shingle and Mixer Valleys. These are treatment systems 2402, 2403 and 2405 in Shingle Valley, and treatment system 2404 in Mixer Valley. Each treatment unit consists of an air stripper and carbon adsorption units with the exception of 2405 which uses carbon only. Station 0535 in Mixer Valley and 1710 in the Research and Advanced Technology Area also have carbon adsorption units. Treated water from 2402, 2403, 2404, 2405 and 1710 is discharged into the treated water reuse system. Treated water from 0535 system is discharged to treatment unit 2404.

Treated groundwater from the remediation systems at the site is stored in ponds 2140 and 2130.

Pond 2140 (near station 0026) is located in Upper Shingle Valley. The pond is bordered by ridge slopes to the northeast and Shingle Creek is located about 150 to 200 feet to the southwest. The pond is rectangular in shape and it is 135 feet long by 70 feet wide with a maximum depth of 8 feet. It has a storage capacity of 333,000 gallons.

The pond is underlain by Quaternary alluvial deposits of unconsolidated clays, silt, sands and gravels. The average permeability of the underlying soils beneath the pond is approximately 10^{-5} cm/sec. If seepage occurs this would create a mound and in so doing would have a beneficial impact by directing the chemical plume in Upper Shingle Valley towards the center of the valley where the groundwater extraction wells are located. Groundwater in the vicinity of the pond and soils in the pond do not appear to be contaminated.

Pond 2130 (near station 0730) is located in Lower Mixer Valley. This pond is

bordered on the west by a ridge, on the south by an embankment and Manufacturing Road, and on the east by another ridge behind which is Las Animas Road. The pond has a capacity of approximately 19 million gallons. This pond is located eastward of a groundwater contaminant plume which is in Lower Mixer Valley.

The lithology of the soils underlying pond 2130 consists predominantly of low to high plasticity organic clays. The seepage from this pond is expected to be minimal. Groundwater downgradient of this pond and soils in the pond do not appear to be contaminated.

Onsite, treated groundwater is used for landscape irrigation, pasture irrigation, and dust control all over the site, and for dust control, landscape irrigation and fire control at the County parks. Originally, treated groundwater was also used for dust control and soil compaction at a construction site known as Silver Creek Country Club.

California Water Code Section 13512 declares it is the intention of the Legislature that the State undertakes all possible steps to encourage development of water reclamation facilities so that reclaimed water may be made available to help meet the growing water demands of the State.

The effluent from reclamation activities should meet drinking water standards at a minimum or meet standards achieved by best readily available technology.

B. Replace Provision 17 with the following:

17. **Rescission of Existing Orders:** This Order rescinds Water Reclamation Requirements (Order No. 91-006).

C. Add the following section following **C. PROVISIONS:**

D. WATER RECLAMATION SPECIFICATIONS

1. Limits: Reclaimed water as applied shall meet the following limits:

Constituent	Instantaneous Maximum Limit (μg/l)	Analytical Method
Volatile Organic Compounds		U.S. EPA Method 8240,8010,8020 or equivalent
Vinyl Chloride	0.5	
Benzene	0.5	
All others, per constituent	5.0	

Semi-Volatile Organic Compounds		U.S. EPA Method 8080, 8270 or equivalent
PCBs	0.5	
All others, per constituent	5.0	
Total Petroleum Hydrocarbons	50.0	U.S. EPA Method 8015 or equivalent

2. **Runoff Control:** No reclaimed water shall be allowed to escape form the authorized use areas by airborne spray, nor by surface flow except in minor amounts associated with good irrigation practice, nor from conveyance facilities.

3. **Application Limitations:** No treated groundwater shall be applied to areas of reuse during rainfall , or when soils are saturated to a point where runoff is likely to occur.

4. **Public Contact:** Adequate measures shall be taken to minimize public contact with the reclaimed water, and to inform the public by placing legible conspicuous warning signs with proper wording at adequate intervals around the use and storage areas.

5. **Cross Connection:** There shall be no cross-connection between potable water supply and any piping containing treated groundwater.

6. **Freeboard:** The storage ponds shall be operated to have a minimum of 2 feet of freeboard to prevent overflows.

7. **Offsite Users-Form:** Offsite users shall fill out a Reclaimed Water Release Form when picking up the treated groundwater from UTC in a tanker truck. If the offsite user is receiving reclaimed water through a pipeline the offsite user shall fill out the Reclaimed Water Release Form once, and the Form shall be effective as long as they receive Reclaimed water.

8. **Offsite Users-Order:** A copy of this order must be provided to all offsite users, and all parties must have this order available at all times for inspection by the Regional Board staff, or State/County Health Departments.

9. **Violation Notification:** In the event that UTC is unable to comply with any of the prohibitions that apply to groundwater reclamation, UTC shall notify the Board by telephone within 24 hours of the incident and confirm it in writing within one week of the telephone notification.

10. **Change in Reclamation**: In accordance with Section 13260 of the California Water Code, UTC shall file a report with the Board of any material change or proposed change in the character, location or volume of the reclaimed water.

11. **No Consumption:** Treated groundwater shall not be used for public consumption.

12. **Vehicle Signs:** Vehicles used for carrying or spraying the reclaimed water shall be identified as such with legible signs.

C. Replace the Self-Monitoring Program with the following:

SELF-MONITORING PROGRAM FOR:

UNITED TECHNOLOGIES CORPORATION,
CHEMICAL SYSTEMS DIVISION

for the property located at

600 METCALF ROAD
SAN JOSE
SANTA CLARA COUNTY

1. **Authority and Purpose:** The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. 94-064 (site cleanup requirements).

2. **Monitoring:** The discharger shall measure groundwater elevations quarterly in all monitoring wells, and shall collect and analyze representative samples of groundwater, surface water and reclaimed water according to the Monitoring Program Plan acceptable to the Executive Officer and submitted annually on October 1.

3. **Quarterly Monitoring Reports:** The discharger shall submit quarterly monitoring reports to the Board according to the following schedule.

Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Period	Jan-March	April-June	July-Sept	Oct-Dec
Due Date	May 21	August 21	November 21	February 21

Reports from other Self-Monitoring Programs required for OU2, Water Reclamation Requirements, and Waste Discharge Requirements may be combined with these quarterly reports. The reports shall include:

a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly

authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form. Groundwater elevation map should be prepared for the wet and dry seasons for each monitored water-bearing zone, and shall be submitted in the second and fourth quarterly reports, respectively. Historical groundwater elevations shall be included in the fourth quarterly report each year.

c. Groundwater Analyses: All new wells shall be sampled on a quarterly basis for the first year. EPA method 8010 or 8240 or equivalent methods, pH, and turbidity tests shall be required for all new monitoring and extraction wells. Other tests such as EPA method 8270 or an equivalent method, and TPH-d shall be required for some wells, depending on the well location. Groundwater sampling data shall be presented in tabular form, and once a year an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate and be presented in the fourth quarterly report. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the fourth quarterly report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

d. Groundwater Extraction and Treatment: The report shall include groundwater extraction results in tabular form, for each groundwater treatment system and for the site as a whole, expressed in gallons per week and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction and treatment systems expressed in units of chemical mass for the quarter. Historical mass removal results for groundwater extraction and treatment systems shall be included in the fourth quarterly report each year. Contaminant removal results for the SVE systems in units of chemical mass shall be reported annually in the fourth quarterly report. Vapor concentrations for startup at each new SVE site visited during the quarter shall be reported in that quarterly report. The report shall also include contaminant concentrations for influent and effluent flows at all the groundwater treatment systems at the site.

e. Status Report: The quarterly report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following quarter.

4. **Miscellaneous Requirements:**

a. Chemicals detected per the EPA Method requirements at a well or a creek station shall be identified and reported in the quarterly reports. When a new chemical is detected and confirmed, all pertinent information including, but not limited to, the contaminant's chemical and physical properties, the source of the new chemical, possible impacts on existing soil or groundwater treatment method(s) utilized at that location, and method of treatment shall be discussed.

b. For EPA Methods 8240 and 8270 an attempt will be made to identify any unidentified chromatographic peak that is larger than 10% of the nearest internal standard (up to 5 peaks for 8240 and 10 peaks for 8270). Based on how well the spectrum of the unidentified peak fits the National Bureau of Standards library compounds, the peak may be tentatively identified or it may be listed as unknown.

c. If an analysis identifies a significant increase (a chemical that has not previously been detected is confirmed above detection limits, or if the concentration of any chemical is at least one order of magnitude greater than detected in the previous sampling) in a pollutant concentration from a well or a creek sampling station, a second sample shall be taken within a month after the results from the first sample are available.

d. Well depths shall be determined on an annual basis and compared to the depth of the well as constructed. If greater than twenty five percent of screen is covered, the discharger shall clear the screen by the next sampling.

e. If turbidity in a well does not stabilize to within 15% relative percent difference for two consecutive purges, the need to redevelop the well will be assessed. If stabilization does not occur after redevelopment, the acceptability of chemical results from turbid wells will be evaluated on an individual basis.

f. Chemical detection limits shall be lower than cleanup standards established in the Order, unless it is technically impractical to achieve detection limits lower than cleanup levels.

5. **Violation Reports:** If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

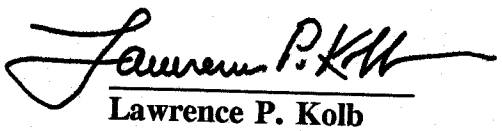
6. **Other Reports:** The discharger shall notify the Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

7. **Record Keeping:** The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of five years after origination and shall make them available to the Board upon request.

8. **SMP Revisions:** Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Lawrence P. Kolb, Acting Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 13, 1995.

9/14/95
Date



Lawrence P. Kolb
Acting Executive Officer